

## **GOLF COURSE OVERSIGHT COMMITTEE**

In accordance with Chapter 164 of Acts of 1998, An Act Relative to the Financing and Operation of a Golf Course by the Town of Natick, the Town Administrator made appointments to the Golf Course Oversight Committee.

The appointments were filed with the Town Clerk's Office on July 5, 2000.

On July 7, 2000 Mr. Paul Cohen, Acting Town Administrator, appeared before the Board of Selectmen to request a confirmation of the appointments as required under Section 4 of the Act.

Mr. Cohen advised the Board if no action was taken, within 15 days or July 20<sup>th</sup>, the appointments would become effective.

The Board with four members in attendance voted 2 to 2 to reject the recommendations.

No further action was taken prior to July 20<sup>th</sup>, as such the appointments stood.

The charge of the Oversight Committee under Section 4 of the Act states "It shall be the responsibility of the Oversight Committee to monitor the operation and financing of the Natick Golf Course and any contracts with any agencies for the operation or enhancements of the facility. The Committee shall accomplish that task by advice and recommendations to both the Town Administrator and Board of Selectmen".

A review of Oversight Committee suggests that the Committee is making every effort to follow the charge set forth in the Act.

The Committee has met and continually meets with Sterling Management concerning matters related to operation.

Although the Committee is involved in discussions relative to the rounds of golf and revenues generated, more emphasis and attention needs to be directed toward the overall financial aspect of the Enterprise Fund.

It is our understanding that the Oversight Committee is meeting more frequently with the Town Administrator to address the financial portion of the operation.

Also attached herein are reports of the Golf Course Oversight Committee for Year 2000-2001 and Year 2002, as well as Sterling Golf Management, Inc.'s Year to Date Summary through August 2003.

Chapter 164 of the Acts of 1998

Golf Course

**AN ACT RELATIVE TO THE FINANCING AND OPERATION OF A GOLF COURSE BY THE TOWN OF NATICK.**

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:*

**SECTION 1.** The town of Natick is hereby authorized to design, develop, construct and equip a municipal golf course, including a clubhouse and related structures, and other recreational facilities on land owned by and located in the town and on land located in the town of Sherborn acquired by purchase or long term lease for up to and including 99 years. The provisions of section 16 of chapter 30B of the General Laws shall not apply to the purchase or lease of any land by the town of Natick in the town of Sherborn. Said land is located southwest of the Natick/Sherborn town line and northeast of Rockwood Road, and is a portion containing approximately 20 acres of the land shown on the town of Sherborn assessors' maps as Map 10, Lot 5.

**SECTION 2.** Notwithstanding the provisions of chapter 44 of the General Laws to the contrary, the maturities of bonds issued by the town of Natick for the golf course project shall either be arranged so that for each issue the annual combined payments of principal and interest payable in each year, commencing with the first year in which a principal payment is required, shall be as nearly equal as practicable in the opinion of the town treasurer, or shall be arranged in accordance with a schedule providing for a more rapid amortization of principal. The first payment of principal of each issue of bonds or of any temporary notes issued in anticipation of the bonds shall be not later than five years from the estimated date of commencement of regular operation of the golf course, as determined by the town treasurer, and the last payment of principal of the bonds shall be not later than 30 years from the date of the bonds. Not more than 10 per cent of the principal amount of the bonds issued for the project may be used to establish a debt service reserve fund. Any net earnings derived from investment of the proceeds of the bonds may be expended by the town treasurer to pay interest on the bonds but otherwise shall be used only for construction, equipping, operation or maintenance of the golf course. Except as otherwise provided in this act indebtedness incurred by the town for the golf course project shall be subject to the applicable provisions of said chapter 44.

**SECTION 3.** The vote of the town passed under article 13 of the warrant for the October 1, 1996 town meeting, authorizing bonds for the golf course project, is hereby ratified, validated and confirmed.

**SECTION 4.** There shall be established a Natick golf course oversight committee consisting of five members to be appointed by the town administrator, two to serve for one year, two to serve for two years, and one to serve for three years, and thereafter until their successors are appointed by the town administrator. These appointments shall be confirmed as provided in section 4-2 of the Natick town charter by the board of selectmen.

It shall be the responsibility of the oversight committee to monitor the operation and financing of the Natick golf course and any contracts with any agencies for the operation or enhancements of that facility. The committee shall accomplish that task by advice and recommendations to both the town administrator and the board of selectmen. Contracts for the construction, maintenance and operation of the golf facility shall be awarded by the town administrator with the approval of the board of selectmen.

**September 25, 2000**

**To: Natick Board of Selectmen**

**From: Golf Course Oversight Committee**

**Re: Selection of a Management Team to Manage the Natick Golf Course**

The Natick Golf Course Oversight Committee's first and most important responsibility is to recommend to the Office of the Town Administrator of Natick a management team to run the Natick Golf Course, now under construction. The management team will tend to the daily operation of the golf course beginning with the grow-in phase.

The requirements of the Request For Proposals (R.F.P.) were carefully and explicitly laid out to each proponent so that there would be no misunderstandings as to what the Town of Natick expected of the management company selected to operate the town's precious asset. The committee held five meetings that included extensive interviews with each of the following companies: Arello, Inc., Environmental Golf, Environmental Landscape, Executive Decisions, and Sterling Management, and members of the committee surveyed individuals who played golf or had knowledge of the courses managed by the five proposing companies.

After much discussion, it is the unanimous decision of this committee that the Town of Natick hire Sterling Management to oversee the daily operations of the Natick Golf Course. Their approach was highly professional and they demonstrated an enthusiastic willingness to work with Natick to make the golf course a success. Sterling has taken over the management of several popular golf courses in the Greater Boston Area bringing success to difficult situations. These are courses which due to poor management had deteriorated to a point where play had diminished. We are referring to Putterham Meadows in Brookline, Newton-Commonwealth in Newton, Chelmsford Golf Course in Chelmsford, and Franklin Park in Boston.

It is vital that the Natick Golf Course be managed by an experienced team with both the necessary skills and the resources to back them up so as to assure the Town of Natick that it will have a financially successful facility that golfers will find both enjoyable and challenging. We believe that a partnership with Sterling Management will insure both of these requirements.

We would also like to thank Acting Town Administrator Paul Cohen for all his hard work and assistance to help us reach an informed decision.

Respectfully submitted,



Edward Salamoff, Chairman

David Baier

Barbara Chinetti

Michael Dank

Peter Garland

**Sterling Golf Management, Inc.**  
**Sassamon Trace Golf Course**  
**Projection vs. 2003 Greens Fee & Cart Revenue**  
**Year to Date Summary**

Month	Greens Fees			Cart Rentals			Season Ticket 2003**	Combined Monthly Projection	Combined Monthly Actual	Combined Monthly Variance	% Change
	Projection	2003 Actual	Variance	% Change	Projection	2003 Actual					
March	2,360.40	4,356.00	1,995.60	84.5%	-	287.00	287.00	2,360.40	4,643.00	2,282.60	96.7%
April	33,334.81	29,938.29	(3,396.52)	-10.2%	2,011.20	3,394.00	1,382.80	35,346.01	36,653.72	1,307.71	3.7%
May	51,658.72	41,959.00	(9,699.72)	-18.8%	4,432.80	6,059.00	1,626.20	56,091.52	51,339.43	(4,752.09)	-8.5%
June	65,945.36	54,620.14	(11,325.22)	-17.2%	8,548.80	8,578.00	29.20	74,494.16	66,519.57	(7,974.60)	-10.7%
July	78,257.08	65,902.50	(12,354.58)	-15.8%	10,783.20	9,509.00	(1,274.20)	89,040.28	78,732.93	(10,307.35)	-11.6%
August	71,957.42	63,892.83	(8,064.59)	-11.2%	10,464.00	9,694.01	(769.99)	82,421.42	76,908.27	(5,513.16)	-6.7%
September	57,501.94				7,740.00			65,241.94			
October	29,791.87				4,567.08			34,358.95			
November	11,868.38				1,437.60			13,305.98			
Y-T-D Ttl	402,675.98	260,668.76	(42,845.03)	-14.1%	49,984.68	37,521.01	1,281.01	452,660.66	314,796.91	(24,956.88)	-7.3%

Total Projected 2003 Revenue is \$452,660.00 (an increase of \$75,443.41)

\* Projection based on 20% increase over 2002 (10% due to better weather & 10% due to increased marketing)

\*\* Actual Y-T-D Season Ticket Revenue collected is \$23,250 & posted evenly over 7 months (April - October)

Month	Rounds		
	Projection	2003 Actual	Variance
March	131	256	125
April	1,951	1,990	39
May	2,798	2,828	30
June	3,660	3,572	(88)
July	4,248	4,307	59
August	3,943	4,308	365
September	3,308		
October	2,393		
November	871		
Y-T-D Ttl	23,304	17,261	529

**Sterling Golf Management, Inc.**  
**Sassamon Trace Golf Course**  
**Projection vs. 2003 Greens Fee & Cart Revenue**  
**Year to Date Summary**

Month	Greens Fees			Cart Rentals			Season Ticket 2003**	Combined Monthly Projection	Combined Monthly Actual	Combined Monthly Variance	% Change
	Projection	2003 Actual	Variance	% Change	Projection	2003 Actual					
March	2,360.40	4,356.00	1,995.60	84.5%	-	287.00	287.00	2,360.40	4,643.00	2,282.60	96.7%
April	33,334.81	29,938.29	(3,396.52)	-10.2%	2,011.20	3,394.00	1,382.80	35,346.01	36,653.72	1,307.71	3.7%
May	51,658.72	41,959.00	(9,699.72)	-18.8%	4,432.80	6,059.00	1,626.20	56,091.52	51,339.43	(4,752.09)	-8.5%
June	65,945.36	54,620.14	(11,325.22)	-17.2%	8,548.80	8,578.00	29.20	74,494.16	66,519.57	(7,974.60)	-10.7%
July	78,257.08	65,902.50	(12,354.58)	-15.8%	10,783.20	9,509.00	(1,274.20)	89,040.28	78,732.93	(10,307.35)	-11.6%
August	71,957.42	63,892.83	(8,064.59)	-11.2%	10,464.00	9,694.01	(769.99)	82,421.42	76,908.27	(5,513.16)	-6.7%
September	57,501.94				7,740.00			65,241.94			
October	29,791.87				4,567.08			34,358.95			
November	11,868.38				1,437.60			13,305.98			
Y-T-D Ttl	402,675.98	260,668.76	(42,845.03)	-14.1%	49,984.68	37,521.01	1,281.01	452,660.66	314,796.91	(24,956.88)	-7.3%

Total Projected 2003 Revenue is \$452,660.00 (an increase of \$75,443.41)

\* Projection based on 20% increase over 2002 (10% due to better weather & 10% due to increased marketing)

\*\* Actual Y-T-D Season Ticket Revenue collected is \$23,250 & posted evenly over 7 months (April - October)

Month	Rounds		
	Projection	2003 Actual	Variance
March	131	256	125
April	1,951	1,990	39
May	2,798	2,828	30
June	3,660	3,572	(88)
July	4,248	4,307	59
August	3,943	4,308	365
September	3,308		
October	2,393		
November	871		
Y-T-D Ttl	23,304	17,261	529

**Sassamon Trace Clubhouse and Maintenance Building Committee**

On Tuesday, May 15, 2001 the newly-appointed Clubhouse and Maintenance Building Committee met in the town administrator's office at 7:00 pm for its initial meeting.

Present were :Edward Salamoff, Michael Dank, David Baier, Peter Garland, Mysore Ravindra, Frank Pepi and Paul Cohen. Absent: Barbara Chinetti.

After some short comments by Paul Cohen, the committee formerly organized with Ed Salamoff as Chairman, Michael Dank as Vice Chairman, and Barbara Chinetti as Secretary.

Paul Cohen announced that the bids from the architectural firms would be opened on Friday, May 18,2001 at noon. Michael Dank and Ed Salamoff said that they would be present for on that occasion.

The next meeting was scheduled for Tuesday, May 22,2001 at 7:00pm in the town administrator's office for the purpose of reviewing the proposals and setting up an interview schedule for the architects.

The meeting adjourned at 7:40 pm

Respectfully submitted,

Ed Salamoff, Chairman

30.1.11  
MAY 15 2001  
MAY 15 2001  
MAY 15 2001

## The Golf Course Oversight Committee 2000-2001

The Golf Course Oversight Committee was established in accordance with Chapter 164 of the Acts of 1998 enacted by the Massachusetts House of Representatives and Senate. The committee's purpose is to monitor the operation and finances of the Natick golf course. In addition, the committee will monitor all contracts with agencies that concern the operation or improvement of the golf facility. This task will be accomplished by providing advice and recommendations on construction, maintenance, and operation contracts to the town administrator, who will award contracts subject to the approval of the Board of Selectmen. The Oversight Committee consists of five members who will initially serve as follows: two for one year, two for two years, and one for three years. Upon the completion of each initial term, subsequent terms will all be three-year terms.

The oversight committee was temporarily appointed by the acting town administrator, July 2000. The committee organized: Edward Salamoff, chairman; Michael Dank, vice-chairman; Barbara Chinetti, secretary; member's David Baier and Peter Garland.

The first and most important duty was to select a management team for the daily operation and maintenance of the golf course. In August, the committee interviewed Environmental Landscape Management, Arello Inc., Environmental Golf, Sterling Management, and Executive Decisions. The committee unanimously recommended Sterling Management, Newton, MA headed by Kevin Osgood. Sterling met all the criteria of the proposal request and had, by far, the most experience working with Massachusetts municipal golf courses. They currently manage and maintain Newton-Commonwealth; Chelmsford; Franklin Park, Boston; and maintain Putterham Meadows, Brookline, MA. On September 25, 2000, the Board of Selectmen unanimously approved the committee's recommendation to select Sterling Management, Newton as the management company.

The committee meets monthly with the management team and more often if needed. Meetings cover course status and course related topics such as buildings, fees, golfer services and other issues.

On December 19, 2000, after much deliberation, the Natick golf course was named "Sassamon Trace Golf Course" in keeping with Natick's Native American Heritage. The course logo was chosen to reflect the name. Winter meetings dealt with course status, the clubhouse, the maintenance building, golf carts, signage, personnel, and marketing.

In April 2001, Peter Meagher was named golf professional. He had been employed in Orlando, FL in a similar capacity. Michael Murphy was named course superintendent having served as assistant superintendent at Pine Brook Country Club in Weston, MA.

In May, the Board of Selectmen voted to appoint a committee for the selection of an architectural firm to design the clubhouse and maintenance building with membership to include an architect.

In June, the request for bids went out for the golf cart contract. Ez-Go, Yamaha,

and Country Club Enterprises (Club Car) all submitted bids. Country Club Enterprises best met the specifications and was recommended for the contract. Club Car is the cart of choice on 85% of the golf courses in Massachusetts. All carts will be electric and thus environmentally friendly. The Board of Selectmen unanimously approved the contract. Also, discussed in June were the high school golf team, golf instruction, and utility hookup for temporary structures.

In July, the date for the grand opening of the course was set for September 1, 2001. The timing provides the benefits of the fall growing season, which will allow a new course to more quickly recover after play and at the same time allow for further growth in areas that were subject to severe rain washouts. The opening day's ceremonies are now in the advanced planning stage.

In reviewing the first year of the Golf Course Oversight Committee, the course is developing into playable shape under the management of Sterling Mgt. Kevin Osgood and his staff. They have accomplished everything we hoped for and more. They are helpful, friendly, and always available. Between meetings they are in regular contact with the committee and the town administrator. As a result, Natick will have a fine golf facility of which the residents can be proud. Play will commence on Labor Day Weekend and continue through October. The course and all the facilities will be ready for a full year of play next spring with complete golf services available to the public.

Respectfully submitted,

Edward Salamoff, Chairman  
Michael Dank, Vice Chairman  
Barbara Chinetti, Secretary  
David Baier  
Peter Garland

Report of the Golf Course Oversight Committee  
2002

This was the first full year for the Sassamon Trace Golf Course, and despite a considerable amount of inclement weather early in the golf season and excessively hot temperatures during the summer, it was a good first season. After a slow start in April, May and early June, we realized that we were going to have to get far more aggressive in our promotional program. With the assistance of Pat Berger of Sterling Management and Natick's Chief Financial Officer, Bob Palmer, we embarked on a promotional campaign that advertised the course in golf magazines, newspapers, and occasionally over the airways as part of promotions with radio stations. Coupon promotions were twice sent (June and August) to some 30,000 households in communities contiguous to Natick. The response was better than we dared hope for based on the historical response. Our Golf Professional, Pete Meagher, put out weekly promotions on the website. Special senior citizen discounts were offered during the weekdays. When the golf season ended about 20,000 rounds of golf had been played. This number should increase during our second full season when we are looking for 25,000 rounds. To achieve this goal we again offer promotions, continue our advertising campaign, add some more leagues, schedule family golf events, and have more tournaments.

Youth play is on the increase and Sassamon Trace is placed well to attract new golfers. To assure that regular golfers are not slowed down by the play of the novice golfer, Pete Meagher will require new golfers to take a lesson in golf etiquette. This is to ensure the expedient movement of golfers around the course.

Sassamon Trace is currently the home course for Natick High, Dover-Sherborn

Regional and the Rivers School. Rivers and Dover-Sherborn pay for their practice and match time, while the Natick team is not charged. Natick players help out with divot and ball marks after their practices under the eye of the Pro or the Greens Superintendent.

Thanks to the fine work of our Greens Superintendent, Mike Murphy, the course continues to mature. Tees and greens have remained in excellent condition and the fairways are thickening up as the root systems expand. Sand traps are well manicured and provide a good test of your golfing ability. The signage and yardage markers add to the enjoyment of play. We will add another water station this coming season.

It is hoped that the maintenance building will be constructed early this season so that daily maintenance can be carried out in a clean environment. The size of the building and it's amenities have been greatly scaled back so that this will be possible.

The Natick Recreation Department will continue to sponsor it's Wednesday morning Womens League and the Friday League with mens and womens divisions. Both were successful this year and increased participation is expected. Recreation Department Head, Dick Cugini, has been most active in promoting various golf programs.

It is hoped that local groups will hold golf outings at the course during the coming year. Remember, this course belongs to the Town of Natick and we of the Oversight Committee want you to enjoy it.

The Committee has reorganized for the coming year as follows;

Chairman .....	David Baier
Vice Chairman.....	Barbara Chinetti
Secretary.....	Paul Power
Members.....	Ed Salamoff
	Steve Carty


We eagerly look forward to the upcoming golf season with new and exciting events. We invite those of you who have not yet played the course to come out and see the challenge our course has to give.

Respectfully sbmitted,

Ed Salamoff.....	Chairman
Mickey Dank.....	Vice Chairman
Barbara Chinetti.....	Secretary
Members.....	Paul Power
	Dave Baier

May 30, 2001

TO: Sassamon Trace Golf Course Designer Selection Committee

FROM: Paul Cohen, Deputy Town Administrator 

RE: Next Meeting

---

The meeting to interview the architects will be held on Wednesday, June 6 at 6:30 p.m. in the **School Committee Meeting Room**, which is located on the 3<sup>rd</sup> Floor of the Town Hall.

The firms to be interviewed are:

6:30 p.m.	Daniel Architects
7:30 p.m.	CSS Architects
8:30 p.m.	Weaver & Associates
9:30 p.m.	Line Company Architects

I have compiled the list of questions that will be asked of all architects. The list has been condensed in order to assure that we address all of the subject areas during the allotted time periods.

**SASSAMON TRACE GOLF COURSE  
DESIGNER SELECTION COMMITTEE**

*Questions for the Architects*

1. Comments on the proposed design of clubhouse and maintenance building
2. Comments on project budget
3. Suggestions for cost reduction (modular?)
4. Staff to be assigned to this project
5. Comments on the geotechnical challenges
6. Preparation of cost estimates
7. Construction administration services
8. Change order history
9. Project schedule for design, bidding, construction
10. Any other thoughts or concerns

## Golf Course Clubhouse Design Selection Committee

On Monday, <sup>May</sup> June 11, 2001 the Natick Board of Selectmen appointed the Golf Course Clubhouse Design Selection Committee to interview and recommend an architectural firm to design and oversee the construction of the clubhouse and maintenance facility at the new Sassamon Trace Golf Course. Appointed to this committee were Edward Salamoff, Barbara Chinetti, Michael Dank, David Baier, Peter Garland, and architects Franklin Pepi and Mysore (Ravi) Ravindra.

The committee organized: Edward Salamoff, chairman; Michael Dank, vice-chairman; Barbara Chinetti, secretary, and members Mysore Ravindra, Franklin Pepi, David Baier, and Peter Garland.

In response to the request for proposals Daniel Architects, CSS Architects, Weaver & Associates, and the Line Company Associates were invited to make their presentations before the committee on June 6, 2001. Prior to these interviews the committee met and under the guidance of our two knowledgeable architect and, put together a set of questions for the firms being interviewed. Upon the conclusion of the interviews the committee met and discussed the pros and cons of each proposal. It was the unanimous opinion of the committee that Weaver & Associates be recommended to the Board of Selectmen as the architectural firm of choice. This choice was subsequently unanimously approved by the board.

Andrew Weaver has quickly jumped into this project and after a meeting at Sassamon Trace with Edward Salamoff, Kevin Osgood and Peter Meagher (Sterling Mgt.), Acting Town Administrator Paul Cohen, and a group of engineers to be involved with the project, ideas and concerns were discussed.

At the time of this report we have settled on a design for the clubhouse. The design for the maintenance facility is in its final stages.

One major concern that we have is a problem with the land upon which the clubhouse will rest. Because the earth is of a peat nature there, it is necessary for supporting columns to be dropped to a depth approaching fifty (50) feet to support even our small clubhouse. Since no other site for a clubhouse is feasible, we will have to deal with this added expense.

Among other areas discussed were the routes of roadways coming into the course, sites for storage and staging of the golf cart fleet, parking areas and landscaping.

It is the desire of the committee to have a clubhouse which can serve the basic needs of the golfing public. We fully understand and agree that the "jewel" of the Sassamon Trace Golf Course is the golf course and not the clubhouse. The new clubhouse and maintenance facility will be ready for the beginning of the 2002 golf season.

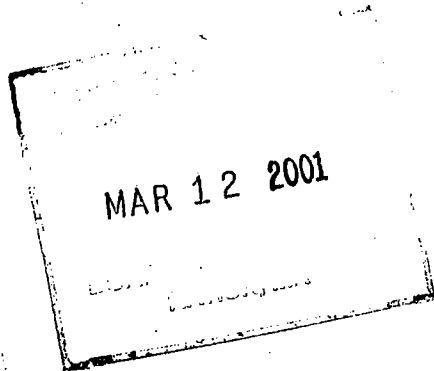
Respectfully submitted,

Edward Salamoff, Chairman  
Michael Dank, Vice-Chairman  
Barbara Chinetti, Secretary  
Mysore Ravindra  
Franklin Pepi  
David Baier  
Peter Garland

DANIEL ARCHITECTS INC

Transmittal

Date: March 13, 2001  
To: Paul Cohen, Natick Town Hall  
Fr: Warren Daniel  
Re: Boring Report by Geotechnical Consultants, Inc.  
Natick Golf Course



Paul, Enclosed are two copies of the report by Geotechnical Consultants, Inc. about their subsurface investigation at the site of the New Natick Golf Course. You will notice that they state that a basement is not anticipated in the design. I called Dick Pizzi to ask about the feasibility of building a basement with the conditions encountered. It is feasible for us to have a basement, and the reinforced concrete walls will become grade beams, and the slab will be a reinforced structural slab as it would if it were slab on grade. The first floor would be raised a few feet above grade to ensure that we stay above the water table, which was encountered currently at 10 foot depth, but likely to rise in the spring. **In short, the premium for the site involves the deep driven piles, and not the basement.**

Dick and I discussed the cost of a foundation with a basement for the project at 600 square feet. His estimates were as follows:

Six piles to approximately 50 foot depth at \$2500 per=	\$15,000
Mobilization cost for pile driving=	\$12,000
Foundation wall as reinforced concrete beams (\$325/Yd)=	\$10,000
Structural reinforced 8" concrete slab (\$15/ sf)=	\$9,000

---

Total of above items: \$46,000

This of course is a very expensive foundation/ basement for a typical 600 sf basement, but is the premium to be paid for building on such a difficult site. We might want to look at the possibility of moving the building to an unfilled part of the site, if one exists. I'll wait to hear from you to make a decision how to proceed. I hope that this doesn't blow your budget out of the water.

Warren Daniel

# Geotechnical Consultants, Inc.

(508)229-0900

FAX: (508)229-2279



---

## REPORT OF SUBSURFACE INVESTIGATION AND FOUNDATION RECOMMENDATIONS

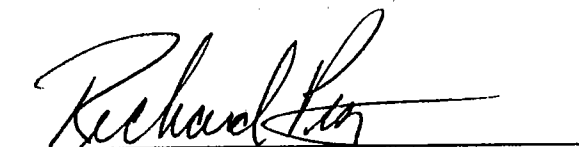
PROPOSED NATICK COUNTRY CLUB  
SOUTH MAIN STREET  
NATICK, MASSACHUSETTS

for

Daniel Architects, Inc.  
20 Main Street  
Natick, Massachusetts 01760

GEOTECHNICAL CONSULTANTS, INC.

  
Michael Tarasiak

  
Richard Pizzi, P.E.

GCI Project No. 2011757

7 March 2001

# Geotechnical Consultants, Inc.

(508)229-0900

FAX: (508)229-2279



7 March 2001

Daniel Architects, Inc.  
20 Main Street  
Natick, Massachusetts 01760

**Attention:** Mr. Warren Daniel

**RE: Proposed Natick Country Club  
South Main Street  
Natick, Massachusetts  
GCI Project No. 2011757**

Dear Mr. Daniel:

In accordance with our proposal dated 19 January 2001, and your authorization to proceed, we have completed a subsurface investigation at the site of the proposed clubhouse for the new Natick Country Club in Natick, Massachusetts. Presented herein and attached are the results of the investigation as well as recommendations concerning the design and construction of the proposed clubhouse foundation and other geotechnical-related issues.

Information used to prepare this letter report was taken from a drawing entitled "Town of Natick, Golf Course & Recreation Area, Grading Plan - Natick Entrance & Parking Area" prepared by Tata & Howard Inc. dated January 2000.

## **SITE LOCATION AND DESCRIPTION**

The subject site is located on the north side of South Main Street (Route 27) near the Sherborn town boundary in Natick, Massachusetts. The general site vicinity is shown on the "Locus Plan" attached as Figure 1. The parcel designated for construction of the clubhouse is part the site of the former Natick Landfill and is surrounded by wetlands. Presently, most of the site is covered by fill comprising the landfill cap. Primary access to the site is through a gated entrance on South Main Street with additional access at the former landfill entrance on West Street.

Site grades over the area of the investigation are relatively level but slope moderately downward from the peak of the landfill at about Elevation 188± feet to the center of the property at about Elevation 142± feet.

A paved driveway is located around the base of the former landfill and two detention basins are located within the vicinity. Standing water was present within both basins at the time of this investigation.

### **PROPOSED CONSTRUCTION**

The proposed construction consists of a new one-story 600± square foot clubhouse and a gravel golf cart storage area adjacent to the proposed building. We have assumed building construction will be wood framed with wood roof trusses and exterior cladding consisting of wood shingles or vinyl siding. No basement space or other below grade space is planned. Foundation loads are expected to be relatively light.

The gravel-paved cart storage area will contain approximately 1,200 square feet of space.

### **SUBSURFACE INVESTIGATION**

A subsurface investigation was completed at the subject site on 16 February 2001 and consisted of two (2) soil borings. Both borings were made within the footprint of the proposed clubhouse. The purpose of the investigation was to accurately define the nature of the subsurface conditions and to evaluate these conditions for foundation support of the proposed clubhouse. Each borehole was advanced using hollow stem augers to maintain an open and stable hole and sampling was done using a split spoon sampler driven with a 2-inch diameter split-barrel sampler into the overburden soil with repeated blows of a 140-pound hammer falling 30 inches. Soil classification was performed using the visual-manual method in accordance with ASTM D-2488.

The borings were advanced to depths ranging between 47 and 57-feet below the existing ground surface. Boring B-2 was terminated at 47-feet below grade in medium dense sand due to an unstable drill hole causing "running sands" to intrude the hollow-stem auger.

Boring locations were determined by Geotechnical Consultants, Inc. to provide adequate coverage within the proposed building without interfering with known or suspected utilities. These boring locations are shown on the "Location Plan" attached as Figure 2. The records of soil classification and driving resistance completed during the investigation are shown on the boring logs appended for reference.

### **SUBSURFACE CONDITIONS**

Based on the subsurface investigation, the subsurface conditions beneath the proposed clubhouse building are reflective of past filling at the site. The varying subsurface profile consists of:

- miscellaneous stratified layers of debris-laden granular fill soils containing various proportions of coarse to fine sand, coarse to fine gravel, organic silt, and various debris;
- underlain by a layer of soft fibrous peat and organic silt; in turn,
- underlain by natural layers of coarse to fine sand containing varying proportions of coarse to fine gravel and inorganic silt,



About 23-feet of debris-laden granular fill was encountered in each of the borings. The granular fill contains various gradations of sand and gravel and varying amounts of organic silt as well as miscellaneous debris. The fill is consistent with the former use of the property as a landfill.

The peat and organic silt underlying the fill was found at depths ranging from 22 to 35-feet below existing grade in the borings. Samples of the peat recovered in the split spoon sampler showed the peat to be soft to very soft and containing a substantial proportion of fibrous matter.

The fill and organic soils are underlain by natural coarse to fine sand with assorted gradations of inorganic silt and fine gravel. The upper 10 to 20-feet of natural sand contains major proportions of inorganic silt and is relatively loose while the underlying layers of sand contains more gravel-sized particles and increases in density with depth. Relative density measured by using the Standard Penetration Test (SPT) of the upper layers of natural sand (33 to 45-feet below grade) indicate a loose stratum with SPT N-values ranging from WOH (weight of hammer) to 2 blows per foot. Relative density of the underlying sand as shown during the borings indicate the natural sand at the site is medium dense to dense with SPT N-values ranging from 10 to 36 blows per foot.

Groundwater was measured at 10-feet below existing ground surface upon completion of each borehole. Groundwater levels vary and are influenced by seasonal changes, local climatic conditions as well as precipitation and other environmental factors including nearby construction activity. Short term measurements of the groundwater levels in low permeability soils are unreliable.

#### **ANALYSIS AND RECOMMENDATIONS**

The fill and organic soils as encountered in the borings are unsuitable for support of the proposed building foundation and ground floor slab. The material gradation, debris and organic content present a risk of differential settlement of any structure founded in or above this material. Therefore, we recommend a deep foundation system to transfer the building loads from the foundation level to the medium dense to dense natural sand immediately below the layer of loose sand underlying the fill and organic soils. In addition, we recommend the building slab be designed and constructed as a structural slab supported on a perimeter grade wall.

The deep foundation system best suited for the conditions at the site are large displacement conventionally driven end-bearing piles supported in the medium dense to dense sand layer below the fill and organic soils and the loose sand strata.



### **Pile Foundation System**

Although the building footprint is relatively small, and foundation loads are relatively light, we recommend the proposed clubhouse be founded on a deep foundation system consisting driven end bearing piles. We expect the piles to be driven into medium dense sands approximately 40 to 45-feet below existing ground surface with the maximum pile length of about 50-feet. Several pile types can be used but given the pile length and load capacity required, we expect standard 10 3/4-inch x 0.365 wall pipe will be the most economical pile. The structural capacity of the pipe piles using the maximum allowable stresses given in the Massachusetts State Building Code exceeds 40 tons but based on expected loading, maximum piles loads should be about 20 tons each and will be dictated by the span lengths of the grade beams.

When substantial settlement of the soil near the top of a pile occurs, additional load is induced into the pile in the form of negative skin friction or down-drag. At this site, the majority of the fill has been in place for many years but is underlain by organic soils that will continue to compress. We anticipate some settlement will occur and that down-drag on the proposed piles may approach as much as 5 tons per pile. For design the down-drag should be added to the vertical loads on the pile from structural live and dead loads.

Once installation equipment and pile hammer selection is complete, an estimate of driving criteria for installation can be made using a Wave Equation Analysis (WEAP). Since the required pile capacity does not exceed the 50-ton threshold limit established in the Building Code, a pile load test is not necessary. Design stresses for the piling material and seismic reinforcement in the top of each pile must also meet the requirements of the Massachusetts State Building Code.

Using pricing information from recent projects in similar soil conditions, we expect the individual pipe piles will cost about \$2,500 per unit including driving costs. One-time equipment mobilization should be about \$10,000 to \$12,000. Other pile types, including driven concrete piles and drilled mini piles may be used with their selection based strictly on cost considerations.

We expect the foundation design will include a perimeter grade beam to carry the wall loads and first floor slab loads. The bottom of the perimeter grade beam should be located a minimum of four feet below grade for frost protection according to the Massachusetts State Building Code. The perimeter grade walls are expected to be 12-inch thick reinforced concrete walls supported directly on the end-bearing piles. The presence of groundwater does not significantly impact the installation of the piles. However, some local dewatering may be required to remove surface water runoff and install the exterior perimeter grade walls.



During pile installation, some ground vibrations will be produced but given the proximity to nearby buildings, and the relative density of the fill soil, we expect vibration limits will be substantially below those likely to cause damage to nearby buildings and other structures.

#### **Structurally Supported Slab & Underslab Utilities**

The ground floor slab must be designed as a structural slab spanning between grade beams. For preliminary estimating purposes, we assumed a one-way slab will be used spanning the 20-foot building width. We estimate the slab will be about 8-inches thick and will be reinforced both top and bottom. The ground floor slab should be underlain by a moisture/vapor barrier consisting of 6-mil polyethylene sheets. The sheets should be overlapped a minimum of one foot at the joints.

We recommend all utilities below the slab, particularly those utilities that are grade sensitive such as sewer and drain pipes, should be supported using hangers embedded in the structural slab. The utility hangers should be stainless steel to prevent corrosion.

#### **Seismic Considerations**

The Code uses a simplified approach for assessing the earthquake liquefaction potential based on the standard penetration resistance SPT N-values. The bearing soils encountered during the investigation at the site are not susceptible to liquefaction according to the Massachusetts State Building Code based on soil gradation and SPT N-values.

Due to the presence of organic soils the soil profile is classified as type  $S_3$ . The total base shear due to seismic activity should be computed using an S-factor equal to 1.5. Base shear can be resisted by placing and compacting granular fill in contact with the grade beams. The granular fill should be placed in thin lifts and compacted to at least 92% of modified Proctor density and should extend outward from the grade beams at least four feet for the full grade beam depth. Assuming the fill is adequately placed and compacted, the lateral resistance of the grade beam will be at least 1700 pounds per linear foot of grade beam.

#### **Gravel Pavement - Cart Storage Area**

Within the proposed cart storage area, we recommend the subgrade be heavily proof rolled to reduce the effect of settlement that will occur within this area. Proofrolling should be done with at least eight passes of a 20,000 pound (dynamic weight) vibratory roller having a drum width of at least eight feet. The roller should be operated at maximum amplitude.



Proposed Natick Golf Course  
South Main Street - Natick, MA  
GCI Project No. 2011757  
7 March 2001  
Page #6

An adequate wearing surface for the proposed "gravel" pavement can be achieved by using a minimum 8-inch thick layer of dense-graded crushed stone placed directly over the proofrolled subgrade. The dense-graded crushed stone should meet Massachusetts Highway Department specifications M2.01.7 and should be compacted to at least 95% of modified proctor density. Some maintenance of the surface should be expected and some re-grading and re-compacting of the surface of the cart storage area will be needed on a regular basis to maintain the area. Placement of a geo-textile fabric below the dense-graded crushed stone will extend the time interval between surface maintenance. Positive drainage within the cart storage area must be provided.

### CONSTRUCTION MONITORING

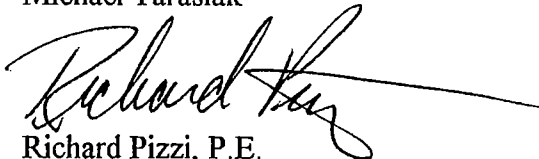
It is recommended that a geotechnical engineer or experienced technician be present during pile installation to observe and record conditions as well as provide material testing services for quality control and documentation as required in Requirements for Structural Tests and Inspections. We recommend that Geotechnical Consultants, Inc. be retained to provide the construction monitoring services during construction. This will provide compliance with the stated design aspects and recommendations of this report. In order to ensure proper implementation of these recommendations into the construction documents, we request the opportunity to review the documents prior to issuance.

We trust the foregoing and attached adequately relate the geotechnical aspects of design and construction for this site and project. As the design development progresses and details of the proposed construction are finalized, some changes to these recommendations may be warranted. It has been our pleasure working with you. Should you have any questions or need additional information, please feel free to contact this office.

Sincerely,  
GEOTECHNICAL CONSULTANTS, INC.



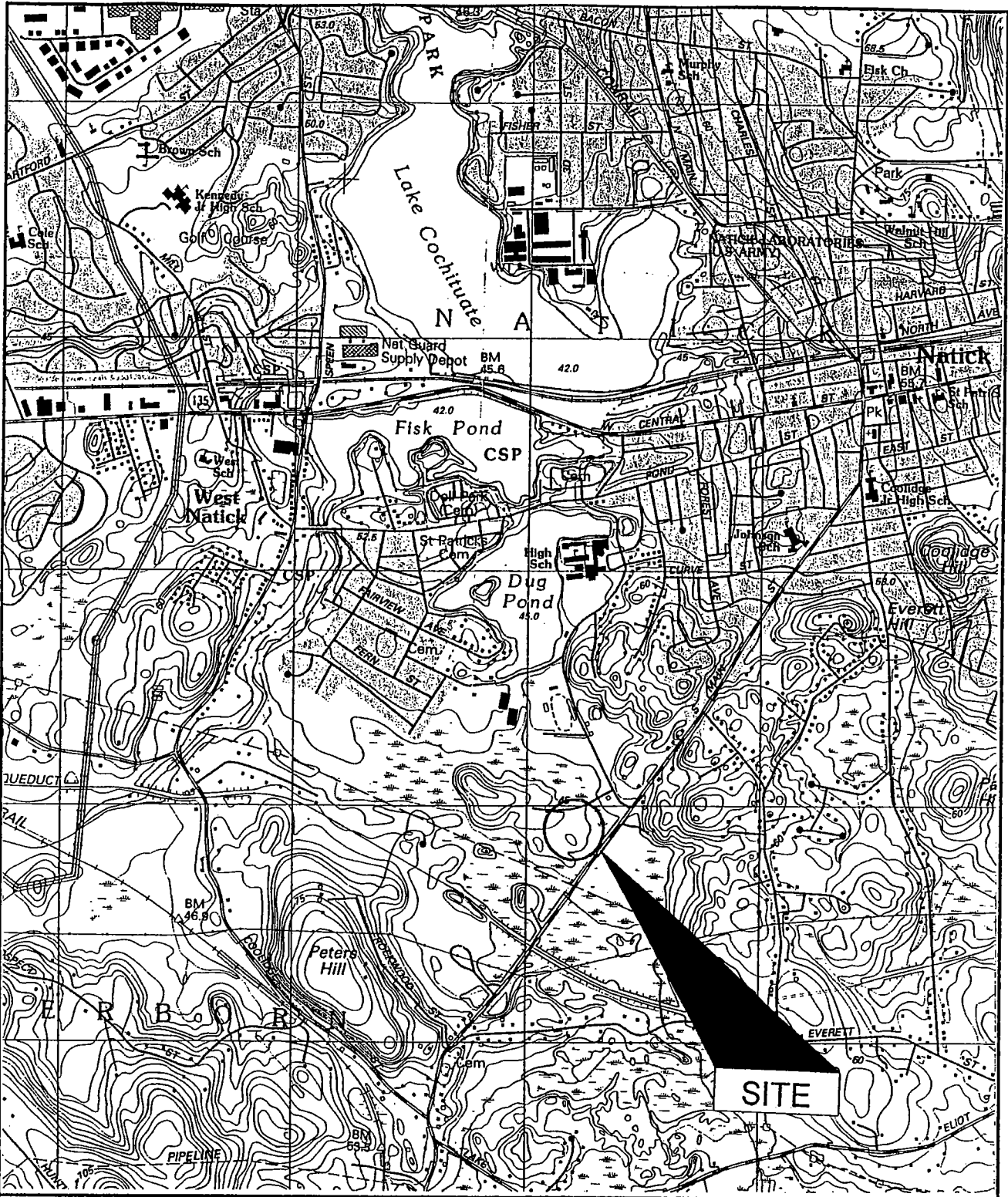
Michael Tarasiak



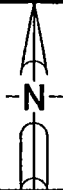
Richard Pizzi, P.E.

MPT/RP/elt  
Attachments





PROPOSED CLUB HOUSE BUILDING  
 NATICK GOLF COURSE  
 South Main Street  
 Natick, Massachusetts

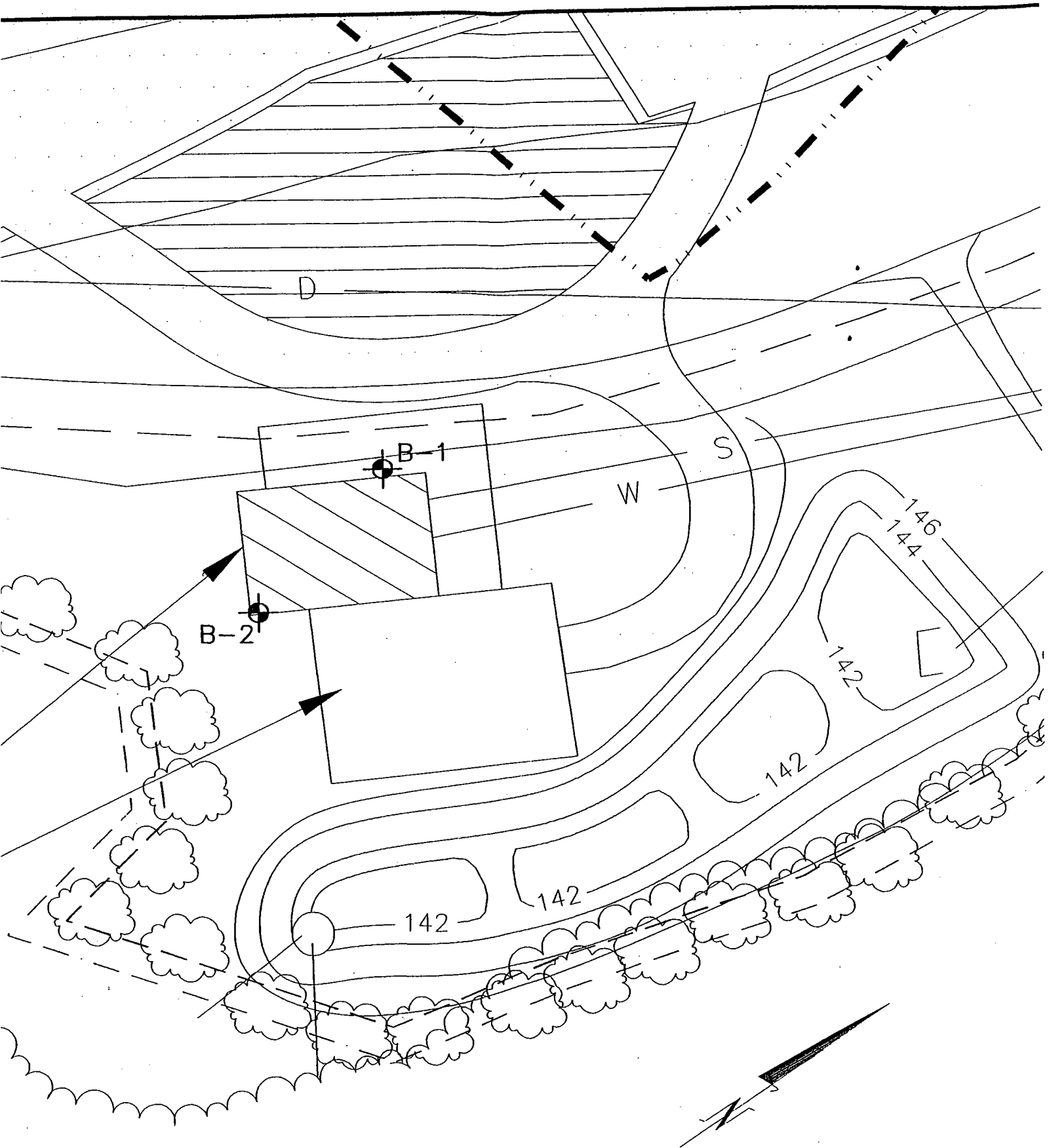


LOCUS PLAN  
 U.S.G.S QUADRANGLE  
 FRAMINGHAM, MA  
 APPROX. SCALE 1:25,000



Geotechnical Consultants, Inc.  
 201 Boston Post Road West  
 Marlborough, MA 01752

Figure 1.



## Boring Logs

# RECORD OF BOREHOLE B-1

**PROJECT:** Proposed Natick Golf Course, Natick Massachusetts

**BORING DATE:** 16 February 2001      **TYPE:** Hollow Stem Auger

**HAMMER WGT/DROP:** \_\_\_\_\_ **CASING:** \_\_\_\_\_ **SAMPLER:** \_\_\_\_\_

**SHEET**      1 OF 2

**ELEVATION:** \_\_\_\_\_

DEPTH (FT.)	CASING BLOWS PER FT.	SAMPLE			Strata Plot	DESCRIPTION	STD. PEN. No.
		No.	DEPTH	BLOWS PER 6"			
		S-1	0'-2'0"	TFF	0.0	FILL: Brown coarse to fine SAND; some silt; trace gravel.	
					2.0	FILL: Grey/brown coarse to fine SAND; little fine gravel and silt.	
5		S-2	5'0"-7'0"	4-22			41
				19-9			
10		S-3	10'0"-12'0"	6-12			22
				10-5			
15		S-4	15'0"-17'0"	8-6	14.0	FILL: Black coarse to fine SAND and organic SILT; little debris, glass.	16
				10-10			
20		S-5	20'0"-22'0"	4-4			8
				4-22			
25		S-6	25'0"-27'0"	3-3	23.0	Black organic SILT and fibrous PEAT.	7
				4-7			
30		S-7	30'0"-32'0"	2-1	29.0	Black organic SILT; trace peat.	3
				2-2			
35					33.0	Dark brown fine SAND and SILT.	

**REMARKS:**      Water noted at 10 feet upon completion.

**VERTICAL SCALE:**  
1 INCH TO 5 FEET

**Geotechnical Consultants, Inc.**  
201 Boston Post Road West  
Marlborough, Massachusetts 01752

Proj. No.  
2011757

# RECORD OF BOREHOLE B-1

**PROJECT:** Proposed Natick Golf Course, Natick Massachusetts

**BORING DATE:** 16 February 2001      **TYPE:** Hollow Stem Auger

**HAMMER WGT/DROP:** \_\_\_\_\_ **CASING:** \_\_\_\_\_ **SAMPLER:** \_\_\_\_\_

**SHEET**      2 OF 2

**ELEVATION:** \_\_\_\_\_

DEPTH (FT.)	CASING BLOWS PER FT.	SAMPLE			Strata Plot	DESCRIPTION	STD. PEN. No.
		No.	DEPTH	BLOWS PER 6"			
35		S-8	35'0"-37'0"	1-1	35.0	Dark brown fine SAND and SILT.	2
				1-1			
40		S-9	40'0"-42'0"	1-1	38.0	Grey fine SAND and SILT.	2
				1-1			
45		S-10	45'0"-47'0"	5-5	43.0	Grey coarse to fine SAND; trace fine gravel and silt.	10
				5-8			
50		S-11	50'0"-52'0"	12-11	53.0	Brown coarse to fine SAND; trace silt.	23
				12-19			
55		S-12	55'0"-57'0"	21-16	57.0	End of boring at 57'0".	36
				20-29			
70							

**REMARKS:**      Water noted at 10 feet upon completion.

**VERTICAL SCALE:**  
1 INCH TO 5 FEET

**Geotechnical Consultants, Inc.**  
201 Boston Post Road West  
Marlborough, Massachusetts 01752

Proj. No.  
2011757

# RECORD OF BOREHOLE B-2

**PROJECT:** Proposed Natick Golf Course, Natick Massachusetts

**BORING DATE:** 16 February 2001      **TYPE:** Hollow Stem Auger

**HAMMER WGT/DROP:** \_\_\_\_\_ **CASING:** \_\_\_\_\_ **SAMPLER:** \_\_\_\_\_

**SHEET**      1 OF 2

**ELEVATION:** \_\_\_\_\_

DEPTH (FT.)	CASING BLOWS PER FT.	SAMPLE			Strata Plot	DESCRIPTION	STD. PEN. No.	
		No.	DEPTH	BLOWS PER 6"				
		S-1	0'-2'0"	TFF	0.0	FILL: Brown coarse to fine SAND; some silt; trace gravel.	7	
					2.0	FILL: Grey/brown coarse to fine SAND; little fine gravel and silt.		
5		S-2	5'0"-7'0"	4-4				
				3-4				
10								
15		S-3	15'0"-17'0"	5-9	14.0	FILL: Black coarse to fine SAND and organic SILT; little debris, glass.		13
				4-5				
20								
25		S-4	25'0"-26'0"	2-1	22.0	Black coarse to fine SAND, some organic silt and peat.		
		S-4A	26'0"-27'0"	1-1	26.0	Black organic SILT and fibrous PEAT.		
30								
35								

**REMARKS:**      Water noted at 10 feet upon completion.

**VERTICAL SCALE:**  
1 INCH TO 5 FEET

**Geotechnical Consultants, Inc.**  
201 Boston Post Road West  
Marlborough, Massachusetts 01752

Proj. No.  
2011757

# RECORD OF BOREHOLE B-2

**PROJECT:** Proposed Natick Golf Course, Natick Massachusetts

**BORING DATE:** 16 February 2001      **TYPE:** Hollow Stem Auger

**HAMMER WGT/DROP:** \_\_\_\_\_ **CASING:** \_\_\_\_\_ **SAMPLER:** \_\_\_\_\_

**SHEET**      2 OF 2

**ELEVATION:** \_\_\_\_\_

DEPTH (FT.)	CASING BLOWS PER FT.	SAMPLE			Strata Plot	DESCRIPTION	STD. PEN. No.
		No.	DEPTH	BLOWS PER 6"			
35		S-5	35'0"-37'0"	WOH	35.0	Dark brown fine SAND and SILT.	23
				WOH			
40					38.0	Grey fine SAND and SILT.	
45		S-6	45'0"-47'0"	7-8	43.0	Grey coarse to fine SAND; trace fine gravel and silt.	
				15-19			
50					47.0	End of boring at 47'0". "Running sands" encountered. Boring not stable.	
55							
70							

**REMARKS:**      Water noted at 10 feet upon completion.

**VERTICAL SCALE:**  
1 INCH TO 5 FEET

**Geotechnical Consultants, Inc.**  
201 Boston Post Road West  
Marlborough, Massachusetts 01752

Proj. No.  
2011757